CLAIMS

What is claimed is:

1. An air cleaner housing for holding a cylindrical filter element and providing a laminar flow of air to a carburetor of a vehicle engine, said housing comprising:

a bottom plate having an outer peripheral portion;

a top cover spaced above said bottom plate, said top cover having a top peripheral portion above the outer peripheral portion of the bottom plate;

said bottom plate, top cover and the cylindrical filter element defining a chamber for filtered air entering said chamber through the cylindrical filter element;

said bottom plate having a convex section radially inward of said outer peripheral portion, a bottom venturi section radially inward of said convex section, a planar section radially inward of said bottom venturi section, and an annular wall radially inward from said planar section and extending away from said top cover;

said top cover having a convex section radially inward of said top peripheral portion, a concave section radially inward of said convex section, and a planar section radially inward of said concave section, where said convex section is at least partially positioned over said bottom venturi section of said bottom plate.

2. The housing of Claim 1 wherein said bottom plate further comprises a concave section transitioning from said convex section to said bottom venturi section.

3. The housing of Claim 1, said top cover additionally comprising a depression radially inward of said convex section; and

said depression being positioned over an outlet defined by said annular wall of said bottom plate.

4. An air cleaner housing for holding a cylindrical filter element and providing a laminar flow of air to a carburetor of a vehicle engine, said housing comprising:

a bottom plate having an outer peripheral portion;

a top cover spaced above said bottom plate, said top cover having a top peripheral portion above the outer peripheral portion of the bottom plate;

said bottom plate, top cover and the cylindrical filter element defining a chamber for filtered air entering said chamber through the cylindrical filter element;

said bottom plate having a contour extending radially inward from said outer peripheral portion, said contour being approximated by a first equation

$$y_1 = \sum_{i=0}^{n} a_i x_1^{\,i}$$

wherein x_1 is an independent variable on the interval 130 to 704;

y_1 is a variable dependant upon x_1;

a_i is a constant taken from the set of

a_0=4985.318;

a_1=-121.16523;

a_2=1.2687824;

a_3=-0.0070787996;

a_4=2.2003603e-05;

a_5=-3.3993253e-08;

a_6=6.3768494e-12;

a_7=5.5080608e-14;

a_8=-5.2974058e-17;

a_9=-3.3657906e-20;

a_{10}=4.6965338e-23;

a_{11}=4.2960913e-26;

a_{12}=-5.4097746e-29;

a_{13}=-2.0260889e-33;

a_{14}=-2.4257828e-35;

a_{15}=5.4669649e-38;

a_{16}=2.8181943e-42;

a_{17}=-4.7997388e-44;

a_{18}=2.9677608e-47;

a_{19}=-5.6220424e-51;

said top cover having a contour extending radially inward from said top peripheral portion, said contour being approximated by a second equation

$$y_2 = \sum_{i=0}^{n} b_i x_2^{\,i}$$

wherein x_2 is an independent variable on the interval 130 to 1089;

y_2 is a variable dependant upon x_2;

b_i is a constant taken from the set of

b_0=4985.318;

b_1=-121.16523;

b_2=1.2687824;

b_3=-0.0070787996;

b_4=2.2003603e-05;

b_5=-3.3993253e-08;

b_6=6.3768494e-12;

b_7=5.5080608e-14;

b_8=-5.2974058e-17;

b_9=-3.3657906e-20;

b_{10}=4.6965338e-23;

b_{11}=4.2960913e-26;

b_{12}=-5.4097746e-29;

b_{13}=-2.0260889e-33;

b_{14}=-2.4257828e-35;

b_{15}=5.4669649e-38;

b_{16}=2.8181943e-42;

b_{17}=-4.7997388e-44;

b_{18}=2.9677608e-47;

b_{19}=-5.6220424e-51; and

n=19.